

**KEYNOTE ADDRESS  
ECONOMIES IN TRANSITION: SOME ASPECTS  
OF ENVIRONMENTAL POLICY**

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**Keynote Address**  
**Economies in Transition: Some Aspects of Environmental Policy**

**by**

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It is such an honor for me to follow in this program such esteemed individuals and close friends. And I am also quite thrilled to be here, in a literal sense, if you would appreciate that in the last 18 hours it's been a 12,000 mile journey to get here on time. When one leaves an afternoon talk in Seoul, stops in Singapore, Bombay, Zurich, and Prague and arrives within a few moments of schedule, I think one can say that some systems in the world are working well. The amazing fact that one can reliably give an afternoon talk in Seoul and a breakfast talk in Prague gives one pause in another way: as fast as economists move, world capital moves even faster; it's just the press of a button. Not only can one shuttle between Seoul and Prague, but Korea and the Czech Republic compete directly for international capital and for markets. When we consider our policy choices and the issues of the day, we have to put them as clearly as possible within the realistic framework of today's world markets and today's possibilities for nations to both grow and improve the environment. And it is in that context that I would like to turn to a specific although very broad part of the current policy agenda: not the question of global cooperation, but the more specific set of issues involved in the transition economies of this region.

As Minister Benda<sup>1</sup> said, the Czech Republic of course participates at the international level as one of the most dynamic and impressive democracies in the world today on international issues, but at the same time the Czech Republic is undertaking and is in the midst of an extremely complex set of changes at home. That is of course true of the neighboring countries as well. My focus, not as an environmental economist but

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<sup>1</sup> Mr. Frantisek Benda, Minister of Environment, Czech Republic.

rather as a macroeconomist and finance specialist, is to introduce some of the issues, if you permit me -- and I stand in awe of all of the specialists in this room, including all of my colleagues who have taught me most of the environmental economics that I know, Dr. Panayotou<sup>2</sup> and others, I stand in awe of you -- but I hope that as a macroeconomist I can put some parameters on the table for the discussions that will transpire over the next couple of days, with my focus on transition economies and environmental management in this neighborhood of the world as economies are making the transformation to markets.

The first and most obvious point, of course, is that it's these very economies that began this transformation with some of the worst environmental problems in the entire globe. On just about every dimension of pollution, water, air, and toxic waste, the centrally planned economies of Central and Eastern Europe and the former Soviet Union were way at the end of the scale with respect to the destruction of the environment and the irrationality from all points of view of the environmental policies. As of the late-1980s, just before the transformations began, air and water pollution and particulate pollution were many times higher in these economies than in the far richer economies just to the west and were far higher than other economies of comparable income level in other parts of the world. Recent studies report (see Zylicz, 1993, Table 1, p. 2), for example, that dust particulates measured as kilograms of emission/\$1000 GDP were 13 times higher in the Central and Eastern European Six than in the European Union as of the late 1980s. Also, various kinds of gaseous pollution, sulfur oxides, and nitrogen oxides were more than two times higher measured as kilograms of emissions/\$1000 GDP. Waste water pollution was more than three times higher measured as cubic meters released into the environment/\$1000 GDP. Thus the starting point in this region is of absolute urgency. In no sense could anyone say that the agenda is only economic transformation without environmental management given the disasters that befell this region during the communist era. And indeed, it is extremely important to remember that one of the great

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<sup>2</sup> Dr. Theodore Panayotou, Director, Central and Eastern Europe Environmental Economics and Policy Project, Harvard Institute for International Development. I especially recommend Dr. Panayotou's overview volume, Green Markets: The Economics of Sustainable Development, San Francisco, ICS Press, 1993.

impetuses for the democratic revolution in this region was the environmental movement and this is no more true than in the Soviet Union itself. I think most historians will regard the Chernobyl disaster as the turning point that made inevitable the collapse of the communist regime of the Soviet Union. (This point is made with special force by Fesbach and Friendly, 1992.)

Why was the pollution so extraordinarily out of line with income levels for this part of the world? I think there are three predominant answers that are important for us in thinking about future environmental management. First, and I think most important, was the subsidization of energy. Energy prices relative to energy costs in this region were typically a fourth or fifth of real energy costs, sometimes lower depending on the country. As you know the result was that the energy intensity of production throughout the socialist world was many times higher, sometimes 5 - 10 times higher in particular sectors (Zylicz, 1993, Table 1). And this had a direct and immediate bearing on the sulfur oxides and the other kinds of particulate pollution that even today still plague some of the cities in this region.

Second and related was the nearly complete obsession of the communist planners with heavy industry. The singular dominant fact of the Soviet economic strategy was the subordination of all human and economic goals to the development of heavy industry, and in that regard there was a perverse kind of success. The Soviet system built up a heavy, mammoth industry, producing outputs used by that same heavy industry to produce more outputs for the heavy industry, and so forth. Of course consumers and human welfare played no role in this. But I still shudder when I think of the fact that at the end of the 1980s the Soviet's steel capacity was around 160 million metric tons at a time when the U.S. steel capacity was 90 million metric tons with an economy some eight times larger. (See Lipton and Sachs, 1992, Table 2, p. 218.) In other words, per dollar of GNP, the Soviet Union was producing 15 times more steel than the U.S. This is of course the worst kind of obsession with heavy industry run amuck that Stalin put in place in 1928 and that didn't cease for 75 years. And with that kind of peculiar success came the destruction of

so much of the environment. Now it is at least crucially important as analysts that we understand that in the first three or four years of the transition to normalcy, heavy industry is declining throughout the region, not as a failure of reform, but as the first inevitable step of reversing the Stalinist legacy. It's a kind of destruction of the old, the creative destruction that's making room for normal life and clean air in the region.

The third aspect, in addition to subsidized energy and obsession with heavy industry, that produced the environmental disasters was clearly authoritarianism itself. Without the opportunities for local citizens, regional governments, organized social groups at the national level to protest the incredible degradation of their environment, these manic planners were able to continue in this way for decades. And I have no doubt that even with the horrible economic tools that were in use at the time, if there had been democratic rule, the protests would have come on much earlier because communities around the region understood that their water supplies were being poisoned, understood that their children were sick, saw the rising rates of cancer, saw the rising rates of birth defects, but had no recourse whatsoever. And I remember vividly talking to despairing Russians in 1989 and 1990 who saw no future for the health of their families because of what they knew to be environmental disasters but without any opportunity for response. So this surely was one of the key factors. The extent to which the mindlessness went on was impressed on me yet again a couple of weeks ago in Moscow, when it was revealed that one of the popular playgrounds for children in one of the parks is filled with radioactive waste. One of the gun emplacements that was kind of a playground instrument for the children to climb on, an anti-aircraft gun, had a night-vision component that was radioactive and that was probably poisoning the children and the environment. This is the direct legacy not even of socialist planning, but simply of totalitarian rule and the absence of any community role in their own environment.

We now have some good studies on how these various factors contribute. I mentioned how I thought the subsidization of energy was by far the single dominant economic factor. Recent studies at the World Bank have indeed confirmed this

interpretation; that more than half of the excess air pollution of the region can be attributed directly to the underpricing of energy during this period. (See World Bank, 1992, pp. 11-12 and Figure 5.)

Now what all of this means is that in the first instance and in the medium and long term as well, democratic and market reforms are the handmaiden of environmental improvement. This is absolutely the case where the reform agenda is concerned. There isn't deep conflict, or indeed any basic conflict at all, between macroeconomists, financiers, and environmentalists. The changes that are underway, both at the macroeconomic and at the finance level as well as in the environmental and political areas, are all working strongly in the same direction. That's why in the last five years there have already been dramatic reductions in many countries in the levels of air particulates, and other kinds of gaseous and water effluents, in the first phase of the market and democratic reforms.

What have we seen? I will mention four elements of the reforms in which simply the market and democratic reforms go hand in hand with vastly improved environmental conditions. First, the core of the radical reforms, in the successful-reform countries -- and put the Czech Republic in the lead together with Poland and a couple of the Baltic states, as the countries that have taken the most decisive reforms to date -- was the slashing of subsidies and the rising of energy prices, in most cases to market levels. And this by itself has already led to a dramatic environmental improvement by reducing the energy intensity of production. And this goes far beyond simply the decline of heavy industry itself, to the intensity of energy use per dollar of production in these economies. What is happening today is what happened in the advanced industrial countries after 1973, when the oil shock hit. If you look at any graph of energy use/dollar of GDP in Western Europe and the U.S., you'll see roughly an upward trend up until 1973. When energy prices were more than doubled with the OPEC oil shocks of the 1970s, suddenly that upward trend stopped and there was a great saving on energy use and a decline in energy intensity. (For a recent graphical account, see Moomaw and Tullis, 1994.) Growth continued but energy

use stabilized or declined and that's precisely what is happening here in transition economies since 1989. The market forces are truly powerful. They worked in the Western countries 20 years ago and they're at work today in the region; it's quite the same pattern. What's also interesting by the way is that absolutely nothing happened to energy intensity in Eastern Europe and the former Soviet Union during the oil shocks of the 1970s. You get a perfect picture of a region completely cut off from the real world and certainly cut-off from the international markets. The region did not experience even a blip of decline in energy use despite a four-fold increase of world energy prices.

The second main feature, in addition to slashing subsidies and allowing prices to reach market levels, has been the establishment of property rights - and this is extremely important in all aspects of environmental control. First, many governments such as Poland had tried to use various pollution charges in the 1980s as a mechanism for pollution control. (For a discussion, see Markandya, 1993; Zylicz, 1993; Stavins and Zylicz, 1994; and Panayotou, 1994.) In fact, there was quite an array of such charges, but they came to nothing in the 1980s because in an era of state enterprises with ready access to the central bank, in other words with a soft budget constraint, there was no way to use economic targets as instruments of environmental control. So establishing property rights in all its senses, including privatization of enterprise, hardening of budget constraint, defining clear property rights for land -- for instance, so that it's not a common dumping ground for industry but is actually owned by individuals or firms that face environmental liabilities and have interests in the long-term, rational use of the land -- changes enormously the structure of incentives. The hard-budget constraint has done two things. First, it made firms responsive to market incentives. Second and directly it has led to the absolute decline of heavy industry, an adjustment that was needed and that was already well underway. While it's true that only an economist would "love" a 25% drop in industrial production, it was something that was vitally needed in this region and came in a way that has made room for consumer goods, light industry, and more rational and energy-efficient industry. Also included in property rights is legal liability, which is another fundamental mechanism for getting rational use of resources. (See Panayotou et



al., 1994, for a discussion of issues regarding environmental liability.) Enterprises have to be concerned that they will be sued these days, if they don't exercise legally consistent policies with regard to toxic waste dumping and other degradation of the land they sit on. This is of course something completely new, but it's also a powerful force.

Third, as I mentioned, democracy itself is a fundamental, new force in the region for environmental control. And here I want to point out a quite basic fact: one of the most dramatic changes in government has been, and will continue to be in the future, the devolution of power from central governments down to local and regional governments. This is, I believe, an environmentally friendly political change in the region as well, because a huge amount of environmental control must be done at the local level. Local infrastructure decisions, local waste-treatment decisions, local tradeoffs between various environmental controls can only be made by local governments. But as you know, up until 1989 there really were no local governments, only local party authorities that took orders from the center. These were among the most highly centralized regimes ever known and the change to viable, independent governments with mayors freely elected at the local level by citizens who hold these mayors responsible for sanitation, water treatment, and so forth, is a tremendous change. The other aspect of democracy is of course going from the state level all the way to the inter-regional context. The fact that the Czech Republic and other countries are now hooked in intensive, ongoing, and permanent discussions with the European Union over environmental policies, standards, and the like adds another extremely important level of political involvement that will be beneficial for the environment. This takes on special importance in the next few years as the leading reform countries join the European Union, something which is of fundamental importance for them and which I very much hope will occur by the year 2000.

Related to that is international integration on an economic level. Several aspects of economic integration are also environmentally friendly. Most obviously, international market forces are leading to the decline of heavy industry and the rise of consumer sectors throughout this region. And you have very dynamic light industry that is one of the

fastest growing sectors of the Polish economy, the Czech economy, and other economies in the region. There are also new high-tech industries which are less polluting than the former heavy industry. So in Poland you have food-processing industries, furniture, apparel, and other such industries which have been growing at a remarkable rate of 10-20% a year since 1992, under the force of international integration (selling their goods mainly to the European Union). The second thing that integration should make possible is large-scale, foreign direct investment in this region. That's also likely to be environmentally friendly. We know that retrofitting industry with environmental controls will often be much more costly than greenfield investment. Therefore, to the extent that there is more rapid foreign direct investment coming in, bringing in modern pollution control technology and, investment in new, less polluting sectors, replacing the old heavy industry, the environment will benefit enormously.

But here I have to say is one of the most disappointing aspects of the reform so far. Of course foreign direct investment has risen in this region, but it still is remarkably low and it's something that all policy makers in Central and Eastern Europe should take special note of. It remains the case that Dr. Lin's<sup>3</sup> country, Malaysia, takes in more

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<sup>3</sup> Dr. Lin See-Yan, Chairman of the Finance Committee of the United Nations Commission on Sustainable

foreign direct investment each year than all of Central and Eastern Europe and the former Soviet Union combined. This is really a sobering fact. Total foreign direct investment inflows into this region total perhaps 3 or 4 billion dollars per year. Malaysia has recently been taking in foreign direct investment of 6 or 7 billion dollars a year. Malaysia is actually one of the best managed, best run, most competitive economies in the world, but it still is peculiar that one country of modest size can out-compete the whole region. The fact is that there still is a lot of work to do in Central Europe in getting the basic market reforms in place, to make the region more investment friendly, to speed up the rise of new industry and the replacement of the old and heavily polluting industry.

What are the problems to foreign direct investment? There are at least three I would like to draw to your attention. Although this is a little bit of a digression, it's very important for the long-term, and even the medium-term development of the Czech Republic, Poland, and other countries in the region. First is the lack of guaranteed access to the European Union markets. Foreign direct investment will not flow in here at a full rate until membership in the European Union is absolutely clear on a clear timetable. This is why I put so much stress on the need to tie down enlargement and why it's so sad that the European Union has been unwilling to set fixed dates for enlargement, to generally play straight with the countries of this region. The European Union doesn't seem to understand how much damage is done by delaying the setting of a timetable for enlargement. The date should be the year 2000 and there should be a clear set of milestones for countries to prepare for that date. As soon as the date is set, this is going to make the investment environment of this region vastly more attractive.

Second and very important, Eastern Europe still has one important socialist legacy and that is a vastly overextended social welfare state, almost the opposite of what is sometimes thought about these reforms. At levels of income that are still a third to a half of Western Europe, the commitments of the social welfare state as a percentage of GNP are equal to Western Europe. Hungary is paying about 22% of GNP in social welfare spending, where Malaysia, I would guess, is now paying 7% or 8% of GNP in social

welfare spending. Poland is paying 21% of GNP in social welfare spending. All of this means very high payroll taxes in Central Europe and an inability to compete with the more efficient countries of East Asia for foreign investment. This is one of the prevailing myths of this region: that somehow you can go to the market, be internationally competitive, and yet keep levels of social welfare spending that are consistent with countries that are three or four times the wealth or the per capita income of these countries. I think this is one of the more dangerous aspects of the economic situation in Eastern Europe today, particularly dangerous because only political parties that promise even more social welfare spending are able to win elections these days, it seems. So the victors in Hungary, Poland, and other countries recently are political parties that are bidding up the amount of social welfare spending even when it's way beyond the "carrying capacity" of these economies.

Finally, I have to say that there is political resistance internally in some countries to foreign investment that also helps to choke it off. In this highly competitive world, when Malaysia, Singapore, Hong Kong, Taiwan, and other countries are eagerly attracting foreign investment, not only through wonderfully stable policies but also through a completely open door, the idea that Poland can say: "Well, no thank you, we can do it on our own," is a level of naiveté which could do great damage to this and later generations. This is yet another factor which, in the indirect way I mentioned, has environmental consequences. It keeps alive old industry instead of replacing it with the new or modern industry which is going to make for a much cleaner environment.

I don't want to end that brief summary without again pointing out the basic point that I made, that the economic reforms to date have already played an enormous role in cleaning up the air and water, that anyone who has recently taken a stroll through Krakow can attest to, because you couldn't do it without crying before, not just crying over the degradation of the city, but because the air was so polluted. But now, with much cleaner air it's possible to envision a much brighter environment. The estimate is that in Poland, for example, air and water pollution is down by 30% beyond what can be simply

accounted for by the decline of heavy industrial production. So there has been a major reduction of pollutants per unit of GNP. (See Stavins and Zylicz, 1994, p. 2 and references therein.)

Now let me turn to the topic of the conference, and that is moving beyond market reforms and property rights which are environmentally friendly, to the more specific and detailed tasks of environmental management itself. We know that markets and clear property rights can take the region a long way to a cleaner environment, but not all the way. Every advanced market economy has, in addition to the standard features of a market economy, a detailed and complex system of environmental management as an add on. Markets can help but alone can't solve environmental problems, because of fundamental mispricing of environmental resources of air and water that are not taken care of simply by eliminating subsidies. There must be one form or another of control, for example on particulate emissions or other kinds of pollution, if the environmental costs are to be properly factored into the marketplace.

Now what do we see in this region so far? We certainly do not see a blank slate regarding environmental policy. We're well beyond the time of saying "You need environmental control," or "Wouldn't it be a good idea to have a Ministry of Environment?" I'm sitting next to the embodiment of that basic notion. Of course the Czech Republic has an extraordinarily detailed and rich environmental agenda and more than two dozen major environmental laws covering air, water, waste management, soil, forestry, construction codes, geology, and the like. So what we're talking about here is not the basic concept. We've got to get down to real specifics and that's hard. Throughout the region we see quite ambitious environmental standards, but so far an inability to meet such standards. And therefore, the region must move from a first stage of elaborating law and ambitions to a next stage of trying to meet some real targets. (This point is particularly stressed by Zylicz, 1993.) Here is really the key topic of this conference.

Why are these ambitious targets not met? Well, first of all because in the initial flush of democracy, overly ambitious targets were made. There were ambitions to reach the levels of clean air, water, and other standards of Western Europe without a clear sense of timetable, cost, proportionality, relation to economic capacity, and the like. So now we need to really move the standards in line with the economic potential. Second, I think it's true in all economies (my own is certainly no exception), there still is a lack of a clear measurement of the costs and benefits of alternative standards of pollution control. The kinds of epidemiological studies, environmental studies, engineering studies that you need to fill in the economist's chart of marginal costs of pollution abatement and marginal benefits of pollution abatement, simply don't exist. This is why moving beyond the simple but important ideas of equating marginal costs and marginal benefits of pollution control is the hardest part. The underlying work to make these concepts into a reality hardly exists in any economy, and surely doesn't exist in transitional economies. The problems of quantification of costs and benefits are especially great in the transition economies, partly because the amount of flux in these economies makes such studies extremely difficult to carry out and partly because there was not a legacy of carrying out such studies beforehand. So we simply don't have clear measures of costs and benefits here and that makes it very hard to set realistic priorities.

The third point I would make is that in many countries, market reforms are still incomplete. State enterprise ownership remains too large in a lot of countries. Poland I put first on the list. I put it first on the list because I regret that case the most. Poland should have completed privatization years ago and was delayed because of political infighting that has been very costly for its reforms and for its environmental management. All the things that I said at the beginning about soft budget constraints still apply for a large part of the Polish industry. How can you think about using tradable emission rights when you still have 40% or half of industry in the state's hands? It's virtually impossible. So there is an ordering of the agenda in that you have to get decent property rights first and then do the underpinnings of environmental management. Without property rights all of the wise lessons from the U.S. and elsewhere that you might pick up about tradable

emissions rights or other kinds of pollution charges simply don't make sense. The failure to complete the reforms keeps this region in a terrible fix. In Russia the new Minister of Privatization, Mr. Polevanov, not only ordered all foreign advisors out of the privatization ministry, but has called for the re-nationalization of large part of industry. This, of course, would be a serious setback, not only for environmental management, but for Russia's crippled economic reforms.

Finally, and I now come even more specifically to the topic of this conference, while standards have not yet been clear and have been over-ambitious, while costs and benefits are yet to be sorted out, it is also true that in the first round of legal preparation here, there has been an under-attention given to economic incentives and an over-attention given to administrative standard setting of the sort that is most prevalent in market economies, but is probably not the most beneficial for market economies. What we have, of course, is the paradox that while we are learning more and more through experience and experimentation about the advantages of using economic incentives like tradable emission rights, Pigouvian taxes, effluent charges, and other such economic mechanisms, administrative command-and-controls have been imported into the region in the first round of legislation, drawing the least relevant parts of Western experience. Because of the way that environmentalism came onto the agenda first in the U.S. and Western Europe, the first round of regulation in the West put undue emphasis on direct administrative, command-and-control mechanisms. And so you have on top of all the problems of identifying priorities, the problem that the most effective instruments of control are not sorted out in Central Europe.

This brings us to the central agenda of the meeting, vis-a-vis this region, and that is the judgment that economically based methods of environmental control such as tradable emissions rights and effluent charges are more efficient mechanisms than command-and-control methods that have been favored in most market economies in the past. Here you have a problem, however, and here's where I turn the agenda over to you. We know a lot more in basic concept about these things than we do in deep detail. There

is still a huge missing body of highly detailed scientific work to be done to get things right, in balancing alternative methods of environmental management. First, it is unfortunately the case that the kinds of remedies that economists point to, like tradable emissions rights, are still basically untested in the world scene with a few exceptions. The experiences are positive on the whole, but they are really a small number of cases. (For an excellent recent survey on which the following section relies, see Stavins and Zyllicz, 1994.) In the U.S., as I understand it (and this is second-hand knowledge if you'll forgive me), the real successes in traded emissions permits have come so far, for example, in the shift from leaded to unleaded gasoline. There was a very clear standard that we wanted to go down to less than 10% of the original base of lead in gasoline in the U.S. There was a timetable and in such a circumstance the use of traded emissions rights turned out to be a very effective way to do it, but this case had a lot of features that made it particularly attractive to use traded emissions rights. Refineries trade with each other all the time, so there was an active competitive market among refineries that could trade these rights. Gasoline is a rather homogenous good. And importantly, there was an agreed national target that made sense. Under these circumstances, this kind of control mechanism is optimal, as an economist would suggest, but it is a little rare that you would have such a clean case.

Tradable emissions rights are also working effectively with the chloroflocarbons, where you have similar kinds of targets to be met and a rather competitive trade environment. But these methods have not yet shown to work in the case of water effluents, for example, where they've been introduced in the U.S., but tradability of these rights hasn't turned into actual trading of these rights. And it still is very preliminary and experimental with respect to air pollutants. So there is a great deal of work to do where you have a deep sense that "yes, this is the right way to go." But setting quantitative targets depends on a detailed epidemiological, environmental, and engineering knowledge that doesn't exist right now. And the base of experience is still unfortunately too shallow to make definitive conclusions.



We also know that as good as these proposals are, and I am also enamored of them as most economists would be, there are other major problems. Tradable emissions rights still require extensive monitoring and law enforcement. Simply trading emissions rights by itself sounds easier than it is because you still need a rather complicated enforcement mechanism to make this system work. The market structure has to be adequate because there are at least theoretical possibilities that in uncompetitive markets, if you tried to trade these rights the result could be barriers to new entry, for example, which would be the utter opposite of what you really want. Finally, the quantitative limits that are to be traded must be set. For an economist these limits or aggregate number of permits are determined by the intersection of marginal benefit and marginal cost, but environmental scientists working with the environmental economists have to fill the precise quantitative limits. That's an extremely important and difficult task -- which I judged to be uncompleted and I hope to be shown wrong by all the expertise in this room -- but it seems to me that's a very important part of the agenda.

My understanding of the agenda ahead, both for this meeting and for environmental management in the region, is as follows. First, both the economists and the environmentalists should underscore the urgency of finishing the first phase of basic economic reform. Ending subsidization of energy, getting normal pricing for most commodities, establishing and enforcing private property rights, ending the soft budget constraint of state enterprises are all measures that are needed for the environment as well as the economy. Second, we must move beyond the overly ambitious environmental targets that have been set, to a more realistic assessment of priorities, with a detailed and careful quantification. This will involve considerable hard work, to judge what are the most pressing problems that deserve our urgent attention and scarce resources. Economists often make it seem very easy: simply equate marginal costs and benefits of pollution control. But what are the costs and what are the benefits? Should we start with controls on air particulates, or water effluents, or sulphur oxides, or toxic waste dumps?

Third, we must embrace the idea of experimentation in methods of environmental management. This is not my usual recommendation. In macroeconomics, I prefer to say, "Do what works, and don't make new experiments!" But in environmental management, even the advanced industrial economies are in the course of major policy experiments with significant changes in strategy. Ten years ago, command and control was the overriding if not exclusive form of pollution control in most countries. Now, economic incentives -- in the form of tradable emission rights, Pigouvian taxes, effluent charges, and so on -- are being introduced. The economies in transition must anticipate these changes and not get stuck with outmoded forms of environmental control. For this reason, experimentation should be a by-word in the region. We must search for effective, market-based solutions that respect local needs and autonomy. Inevitably, some types of methods must be phased in slowly, only after determining that they are an effective method of control. An experiment in using tradable emissions rights, in one region or for one form of pollution, might therefore be a high priority in each country.

Finally, I would like to stress again the importance of harmonizing environmental and economic strategies with the rest of Europe. I cannot stress too much, both to the Western Europeans and the Central and Eastern Europeans here, the importance of economic integration and enlargement of the European Union on a rapid timetable. Enlargement of the European Union is the sine qua non of the success of economic reform and dynamic economic growth in Central and Eastern Europe. The European Commission should be preparing documents for the next Summit on rapid enlargement, and the Environmental Ministries should get into this discussion and push for their seat at the table to make sure that environmental issues are also addressed, both as a way to speed and to facilitate enlargement of the European Union.

With these thoughts, I ask for your forgiveness for my over-long address, and I especially thank you for your invitation to a generalist like myself to sit with such esteemed experts in environmental management. Now I can sit back and learn from you, and look forward to future cooperation in this vital area. Thank you very much.

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